Paper No. 16

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte BERND GIROD

Appeal No. 2001-2293
Application No. 08/984,602

ON BRIEF

Before BARRY, LEVY, and BLANKENSHIP, Administrative Patent Judges.

BLANKENSHIP, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 1-17, which are all the claims in the application.

We reverse.

BACKGROUND

The invention is directed to a user interface system that detects the presence and position of a source of modulated light. Representative claim 1 is reproduced below.

> 1. A method for tracking within frames of digital video data movement of a light source that emits light modulated different from a frequency of the frames of digital video data, comprising the steps of:
>
> determining presence of the light as a function of relative luminances of portions of a frame of digital video data and difference luminances between the portions of the frame and corresponding portions of a previous frame;
>
> storing coordinates and associated codes for selected portions of the frame, the codes indicative of relative luminances and difference luminances of the selected portions, and the selected portions having the greatest relative luminances and difference luminances; and
>
> determining a position of the light within a frame as a function of the relative luminances, the difference luminances, and coordinates and associated codes of the selected portions of the frame relative to coordinates and associated codes of selected portions of the previous frame.

The examiner relies on the following references:

Iura et al. (Iura)	5,617,312	Apr. 1, 1997 (filed Nov. 18, 1994)
Siio	5,943,042	Aug. 24, 1999 (filed Oct. 5, 1995)

Claims 1-17 stand rejected under 35 U.S.C. § 103 as being unpatentable over Iura and Siio.

We refer to the Final Rejection (Paper No. 8) and the Examiner's Answer (Paper No. 13) for a statement of the examiner's position and to the Brief (Paper No. 12) and

the Reply Brief (Paper No. 14) for appellant's position with respect to the claims which stand rejected.

OPINION

Appellant asserts that the 35 U.S.C. § 103 rejection relying on the references of Iura and Siio is erroneous because, inter alia, there is no evidence of a teaching or suggestion for making the proposed combination. (Reply Brief at 3-4.)

The rejection submits that "Iura fails to particularly disclose the source is emitting a modulated light " as specified in the independent claims. (Final Rejection at 3.) The rejection concludes that it would have been obvious to "modify the modulated light (36) of Siio into the light source (801) of the pen (603) of Iura for the same purpose of emitting light modulated different from a frequency of the frames so that a camera of Iura is easily to detect [sic] the modulated light and the video images." (Id. at 3-4.) "Doing so would allow the light source emitting the modulated light to prevent interference caused by light from other sources." (Id. at 4.)

Siio discloses a wireless mouse 16 (Fig. 3A) having an LED 36 actuated by an operation button 34. According to the reference, the light can "transmit a specific ID." The ID is shown as element D4 in Figure 3B. Col. 3, ll. 51-67. In the embodiment depicted in Figure 3A, terminal 28 has a "light-receiving part" 40 for reception of light from mouse 16. Col. 4, ll. 1-6. The system uses the mouse ID for bringing up particular objects, on monitor 42, that are linked to a specific ID. Col. 4, l. 49 - col. 5, l. 7.

In the embodiment shown in Figures 5A, 5B, and 6, described in columns 6 through 8 of the reference, a projector 118 operates as a substitute for a computer monitor screen by projecting a picture onto board 110. A camera 114, in combination with a computer, determines the position of pointing device 16. As in the first embodiment, pointing device 16 comprises an operation button 34 and an LED 36. The pointing device contains an identifier which corresponds to an object stored on the computer.

However, the examiner has not pointed to support in the evidence before us (e.g., in the references applied against the claims) for the asserted reasons for combining the teachings so as to meet the terms of the instant claims. The offered reasons for the combination appear to arise from appellant's teachings in the instant specification (e.g., p. 9, l. 20 - p. 10, l. 4), rather than from the prior art. The "modulation" of the light in Siio is for providing an identifier for a particular pointing device. See Siio col. 4, ll. 49-54 and col. 6, ll. 48-53; Fig. 3B. The proposed combination thus appears to be based on improper hindsight reconstruction of appellant's invention, rather than setting forth a case for prima facie obviousness based on objective teachings of the prior art.

Moreover, even if there were suggestion from the prior art to combine the references as contemplated by the rejection, we agree with appellant that not all limitations of the instant claims are taught by Iura and Siio.

Instant claim 17 requires means for determining presence of the modulated light as a function of relative luminances of portions of a frame of digital video data and difference luminances between the portions of the frame and corresponding portions of a previous frame. In appellant's embodiment of the invention, separate non-linear filters (A and B; Fig. 4) are used to (1) determine relative luminances within a frame and (2) analyze differences in luminance between frames, consistent with the separate requirements of the claim.

The rejection (Final Rejection at 2-3) relies on material in columns 3 and 4 of Iura for the means for determining presence of the light, using relative and difference luminances. However, the description at column 3, line 45 through column 4, line 65 of the reference (and the more pertinent teachings at column 5, line 55 through column 6, line 8) details comparison of differences in coordinates with respect to different frames for generating displacement signals to emulate signals generated by movement of a pointing device (e.g., a mouse), rather than using difference in luminance between different frames to determine presence of light.

Independent claims 1, 2, and 16 contain similar limitations to those of claim 17 that we find lacking in the references.

Claim 3, the remaining independent claim, requires a first detection circuit to detect presence of modulated light having a first modulation frequency, and a second detection circuit to detect modulated light having a second modulation frequency. The rejection (Final Rejection at 3) relies on Iura Figure 1, elements 105 and 107, 109 as

teaching the respective first and second circuits. Image signal processing circuit 105 processes digital image signals to produce video signals. Iura col. 3, ll. 45-59. Microcomputer 107 calculates the difference between coordinates in different cycles (i.e., frames), and computer apparatus 109 moves a cursor accordingly. Id. at col. 2, l. 65 - col. 3, l. 4 and col. 4, ll. 32-65. Thus, while Iura may teach "circuits," the rejection falls short in showing disclosure or suggestion of all the claimed elements, thus failing to set forth a convincing case for unpatentability of the claimed subject matter.

Since the burden of setting forth a prima facie case for obviousness has not been met with respect to any of the independent claims, we do not sustain the section 103 rejection of claims 1-17 under 35 U.S.C. § 103 as being unpatentable over Iura and Siio.

CONCLUSION

The rejection of claims 1-17 under 35 U.S.C. § 103 is reversed.

REVERSED

LANCE LEONARD BARRY Administrative Patent Judge	)
STUART S. LEVY Administrative Patent Judge	) BOARD OF PATENT) APPEALS) AND) INTERFERENCES
HOWARD B. BLANKENSHIP Administrative Patent Judge	)

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